Assignment:\_\_\_\_

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Hour:\_\_\_\_

Standard 8 Radioactivity- Review Sheet

**Objective: Radioactivity Basics**

1. What is radioactive decay?
2. Put the three types of decay we learned about in order from weakest to strongest. What will protect you from each type?
3. Why is radiation harmful?
4. Why is radiation helpful?
5. Describe how the following terms relate to radiation:
	1. Tracer –
	2. Background radiation –
	3. Geiger Counter -

**Objective: Fusion vs. Fission**

1. What is the difference between fusion and fission?
2. What do we mean when we say fission is like a chain reaction?
3. Give an example of fusion and an example of fission.
4. How have nuclear bombs been a part of United States history?

**Objective: Nuclear Energy**

1. What type of decay do nuclear power plants use?
2. Describe the safety features nuclear power plants have to avoid meltdown.
3. Label the following parts in the picture below: Cadmium Control Rods, Uranium, Turbine, Generator, Cooling System



**Objective: Half Lives**

1. What is a half life?

Carbon-14 is a radioactive isotope found in tissue from once living organisms. The half life of C-14 is 5,730 years. Use this information to answer the following questions.

1. What is the age of a fossil that has 25% of carbon-14 left in it?
2. How many half lives will pass by the time a 150g sample of carbon-14 decays into 4.69g?
3. How many years does it take for a 150g sample of carbon-14 to decay to 37.5g?
4. What percentage of a sample of C-14 remains after 11,460 years?
5. How much of a 200g sample of C-14 will remain after 4 half-lives (give your answer in grams)?

Use the graph about Strontium-90 below to answer the following questions.



1. What percent of Strontium-90 is left after 75 years?
2. What is the half life of Strontium-90
3. If you had 200g of Strontium-90, how much would be left after 25 years?
4. If you had 500g of Strontium-90, how much would be left after 4 half lives?
5. If you have 12.5% left of Strontium-90, how old is the sample?